PD 4000/340 FLOWMETER SYSTEM
with Printer Option

VOLUME: 5466.77 L

FLOWMETER-DISPLAY

METER A	METER B	METER C	7	8	9	CE
FLOW	TOTAL	TEMP	4	5	6	+/_
BATCH	PRINT	SETUP	1	2	3	.
START ∧	STOP ∨	CLEAR Prev Page	‹	0	›	=

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PD 4000/340
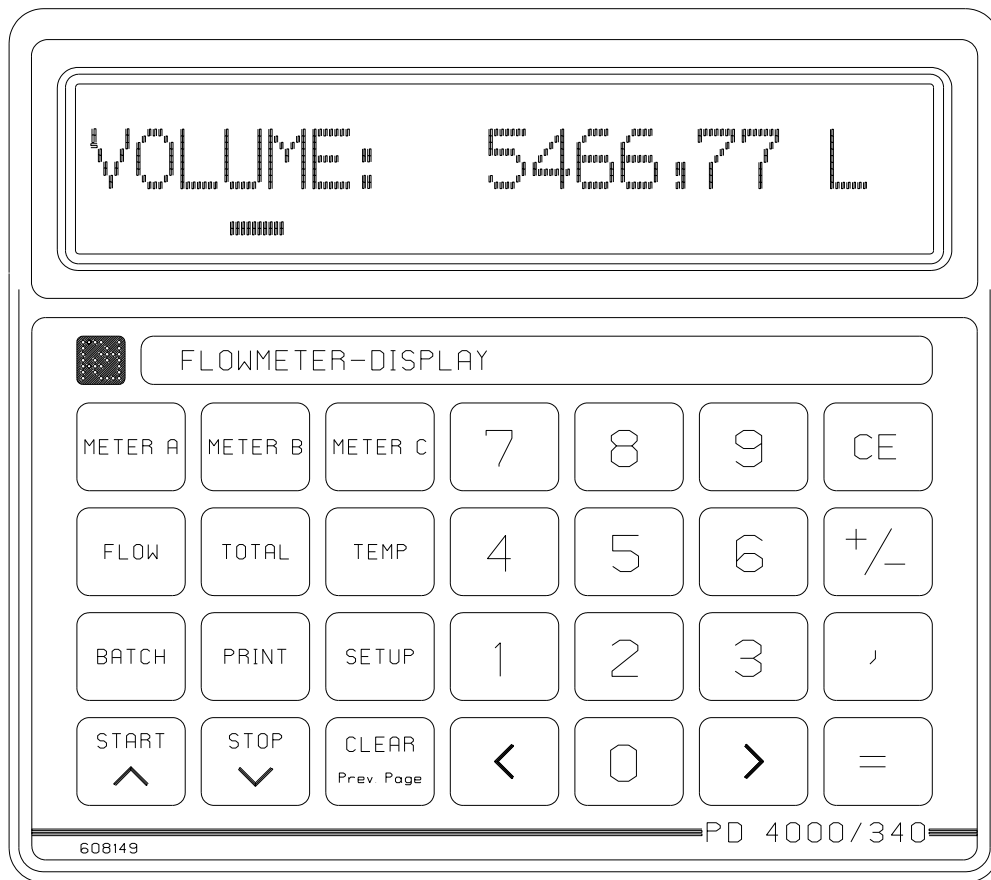
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Features

- Simultaneous supervision of up to three flow transmitters
- Automatic configuration of connected flow transmitters
- Option for connecting a printer through a P-NET/RS232 Interface
- Menu based display selection
- Built in Batch Control
- Calculation of Average Temperatures
- Comprehensive error detection and alarm functions
- Creation of a NodeList for all modules connected to the Fieldbus
- Battery back-up for displayed volume counter values.
- Completely sealed construction
- P-NET Fieldbus communication, EN 50170 vol. 1
- Real time clock
- EMC approved (89/336/EEC)
- Vibration approved (IEC 68-2-6 Test Fc)

Introduction

The Flowmeter-Display has been designed to collect and display data from PD 340 flow transmitters. It also provides the ability to modify data and to select various functions within the flow transmitters.

If a PD 3940 - P-NET to RS232 Interface module is connected to the system, a printer having an RS232 interface can also be included. A ticket showing measurement data, together with related customer information, can then be printed.

The keys on the Flowmeter-Display consist of both numerical and function types. The primary data from a flow transmitter e.g. actual flowrate or measured volume, may be selected and displayed by pressing a single function key.

Configuration of the Flowmeter-Display, calibration of the flow transmitter modules and configuration of the RS232 Interface module, can all be performed via the SETUP menu.

Complete configuration of a PD 340 flow transmitter may be performed automatically, simply by pressing the "SETUP" key and then selecting "AUTO SETUP". The automatic configuration may be adjusted to match a specific customer requirement.

The actual configuration for each of the selected flow transmitters, may be printed out or listed in clear text on the display.

A number of automatic functions are available within the system, including batch control with automatic tail correction, average temperature calculation, together with comprehensive error checking and alarming.

Two separately available design tools have been specifically developed for use with the flowmeter system. The first is a database program, for setting up a customer database, and the second is a design program for easy creation of printer ticket layouts. Both programs are installed on a standard PC running Windows 95. A particular ticket layout or customer database, is downloaded to the PD 4000/340 Flowmeter-Display via a P-NET interface. The facilities offered by these programs, provide the customer with a high degree of flexibility in choosing the type of printer that is appropriate for the system.

System Description

The Flowmeter-Display utilizes the PD 4000 P-NET Controller. The PD 4000 is a standard display and controller element. To enable a controller to operate as a Flowmeter-Display, a special program is downloaded into the controller's FLASH memory from a PC.

The Controller is completely sealed, and is therefore suitable for use in any industrial environment. The compact design and the outstanding environmental features of the Controller, makes it exceptionally suitable for mounting on machines and for use in mobile applications.

Display

The display is a fast graphics LCD, providing a wide viewing angle. The display has a resolution of 150 by 20 pixels, enabling a variety of character fonts and graphics to be used, e.g. 3 lines with 25 characters each. The viewing area is 120 mm * 19.2 mm. An LED back light is incorporated. The display is covered by non-reflecting glass.

Keyboard

The keyboard has a membrane click-switch foil, with metal domes. It has 28 available keys. The Flowmeter-Display application includes a purpose designed, self adhesive keyboard overlay, where the key function markings have been adapted specifically for the application. This promotes an ideal operator/instrumentation interface.

Extended Applications

Communication between the flow transmitter modules and the indication unit is performed via the P-NET Fieldbus System. Up to 125 master and slave units may be connected to the bus, where a unit may be a PD 340 flow transmitter, a PD 4000 / 340 Flowmeter-Display or any other P-NET module.

A maximum of three flow transmitters may be selected and supervised simultaneously. In large systems, having more than three flow transmitters connected, these can be selected and displayed by means of their node addresses.

A flowmeter system with additional flow transmitters and a printer connected, is shown below.
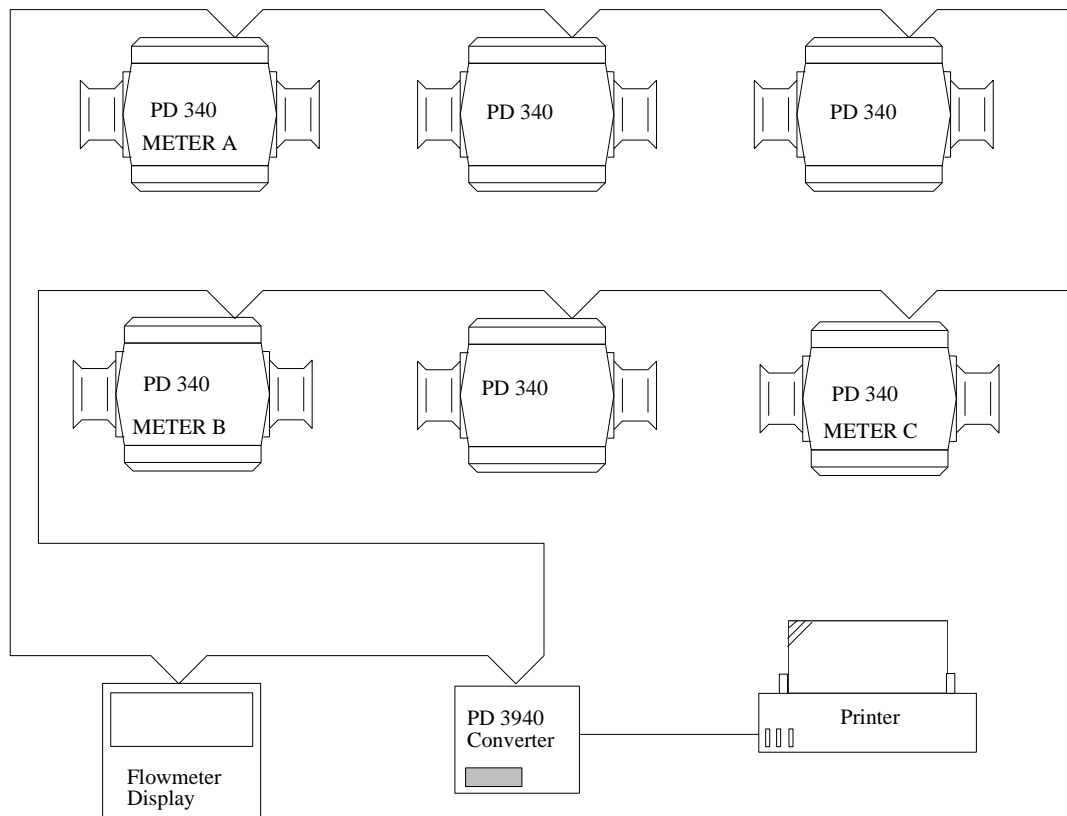
Example of a Flowmeter system with additional flow transmitters.

SYSTEM SPECIFICATIONS

Electrical specification for P-NET:

Bus structure: Physical ring without termination.

Medium: Shielded twisted pair cable with min. .22 mm² area conductors

Impedance: 100-120 ohm.

Suitable cable: TWINAX IBM 7362211 105 ± 5 ohm, 51 pF/m.

Bus length: Max 1200 m (RS 485).

System Power:

4000 Controller (DC)	nom.	24.0 V
	min.	20.0 V
	max.	28.0 V
Ripple :	max.	5 %
340 Flowmeter (AC/DC):	24.0 V ± 15%	

Ambient Temperature:

Operating temperature :   -25 °C to 70 °C

340 Flowmeter: -10 °C to 50 °C

Storage temperature :   -40 °C to 85 °C

PD 4000 Controller, Mechanical:

Width:	144.0 mm
Height:	127.0 mm
Depth:	52.5mm

Materials

Case:	Black NORYL GFN
Overlay:	Polycarbonate
Sealing:	IP68 @ front panel mounting

Installation:

PD 340 Flowmeters used within the system should be of the "extended" type.

The Flowmeter-Display should be configured for appropriate node address and number of masters.

Approvals:

Type Approval:

The system has been certified as legal for trade in Denmark, and complies with OIML Draft "Measuring Systems for Liquids other than Water". System ID is IV-302.

Environmental Approvals:

Complies with EMC-directive No:89/336/EEC

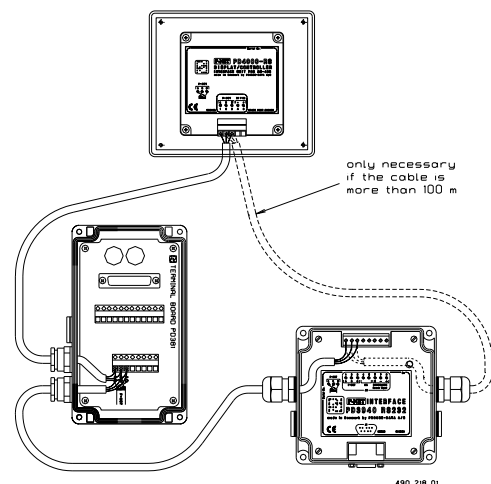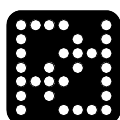|	
Generic standards for emission:	
Residential, commercial and light industry	EN 50081-1
Industry	EN 50081-2
Generic standards for immunity:	
Residential, commercial and light industry	EN 50082-1
Industry	EN 50082-2

Vibration (sinusoidal):   IEC 68-2-6 Test Fc

System Connections

only necessary if the cable is more than 100 m

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